Passed March 15th 1824

W. E. H

Dean.

No. 11

An

Inaugural Essay

on

Hæmoptysis

By

Alfred T. Magill

of

Virginia

—//—

Of all the diseases comprehended under the order Hemorrhagia of Cullen. Hæmoptysis stands the most conspicuous in point of importance and danger and demands our sedulous attention and investigation. The immense importance of the lungs to the well=
=fare of the animal economy - their extreme vas=
=cularity - their proximity to the principal agent in the circulation by which the blood is impelled into them with all the velocity which the contr=
=actile power of the right ventricle of the heart is capable of imparting to it must all contribute to render Hæmoptysis a disease pregnant with danger, the violent forms of which frequently baffle our best directed efforts and hurries the unfortunate sufferer with irresistable impet=
=uosity to the grave.

The term Hæmoptysis compounded of the two Greek words αιμα blood, and πτυω to spit is a very indefinite one, merely expressing the spitting of blood without designating the source from which it flows. there=

= fore as the hemorrhage may have its origin in different parts. such as the lungs. Trachea. fauces. and Stomack. it is essentially necessary that we should be acquainted with the characteristic symptoms of each. to enable us to discriminate between them and form correct practical deduc= = tions. This we may readily do by attending to the existing symptoms and to those which preceded the discharge. when the blood originates in the fauces. it is brought up by hawking & is unattended. by any of those symptoms which characterize pulmonic hemorrhage. such as cough. febile excitement. oppression or pain about the thorax, moreover by inspecting the throat we can frequently discover the effusion of blood if it comes from the fauces. and are thus enabled at once to silence all doubts on our part and to relieve the patient from much anxiety and distress which he would have suffered if permitted to remain in uncertainty.

When the hemorrhage has its source in the lungs it is brought up by coughing, is frothy and of a florid colour. immediately previous to its ap= =pearance a saltish taste is perceptible in the mouth, these in conjunction with the symptoms preceding the discharge unequivo= =cally point out its origin.

It is no less necessary that a line of distinction should be drawn between Hemoptysis and Hematemesis, and fortunately the diagnostic symptoms are sufficiently palpable to preclu= =de any doubt or mistake on the subject. In Hematemesis the blood is thrown up by vomi= =ting is of a darker colour, grumous, and mix= =ed with the other contents of the stomack. antecedent to the discharge there is generally a sense of heat or distension in the Gastric region. accompanied with nausea.

The causes of Hemoptysis are those of hemorrhage in general, but there are some which particularly

tend to produce Hæmoptysis. a predisposition to this disease is frequently implanted in our physical constitution. accordingly we find those most afflicted with it who have nar= =row contracted chests. long necks. weak. and delicate habit of body. But this predisposition is developed and brought into action by a great diversity of causes. such as violent exercise especially in lifting heavy weights. paroxysms of rage. bursts of laughter. long and loud speaking. vicissitudes of weather. intempe= =rance or the suppression of any accustomed discharge. There are several species of the disease which arise from different causes and are attended with different degrees of danger. the first is an accidental rupture of a vessel resulting from a blow or wound in the Thorax, and here if no consumptive tendency exists the patient generally recovers. The second arises from inflammation of

the lungs. as in Pleurisy or Peripneumonia and if not excessive. I should suppose it would be rather useful than detrimental by topically depleting from the inflamed lungs. The third species arises from the suppression of some accustomed discharge as the Menstrual or Hemorrhoidal, This is not dangerous unless very copious or attacking those labouring under a consumptive diathesis, but when this predisposition exists every species of Hæmoptysis is exceedingly hazardous. Fourthly Hæmoptysis may arise from abscesses or ulcerations in the lungs. the effect of unsubdued inflammation in those organs. and here although our prognosis is less favourable than in the preceding species nature frequently repairs the breach and the patient is restored to health. Fifthly it may arise from Tubercles associated with a scrofulous

diathesis. this case generally terminates in that opprobrium of our art Phthisis. Pul= = monalis.

I come now to the pathology of Hæmoptysis but as a full discussion of this part of the subject would trans grese the limits I have assigned to this paper, my remarks on it will be very brief. It appears that the con= = dition of the bloodvessels is nearly the same in hemorrhage and inflammation. but in the one case the distended capillaries directly unload themselves by an effusion of blood in the other by a more tedious process the secretion of coagulable Lymph Hemorrhage from the lungs has been sup= = posed to occur in four different ways 1st by a rupture of a vessel called Rexis. 2nd by an erosion of the coats of a vessel called diabrosis. 3d by anastomosis or mere dilatation ~~of the mouths~~ of the

mouths of the extreme vessels. 4th by diapedesis or the transudation of blood through the parietes of the bloodvessels. of all these theo= =ries that which refers hemorrhage to the mouths of the exhalents is the most ratio= =nal and best supported. among the ad= =vocates for which stand the great Bichat and he has I think incontestably established the fact by the most conclusive and con= =vincing experiments. In the first place he observes. that in no cases on dissection could he discover any traces of erosion although he employed the nicest care in washing and macerating the parts. and in examineing them with a microscope secondly that in squeezing the mucous surfaces of the Uterus in those women who died during menstruation. a number of small drops of blood may be pressed out manifestly corresponding with the.

mouths of the exhalents. 3d that Hemorrhage sometimes takes place from free surfaces in which the blood evidently comes from the exhalents which renders it probable that the same thing occurs in mucous surfaces 4th that if rupture always preceded hemorrhage the internal surface of the womb would be a mere collection of cicatrices as we must suppose one or two rupture to occur at every accession of the menses. These are a few of the arguments which he brings forward to substantiate his opinion and so conclusive do I esteem them, that they must strike every unbiased mind with conviction. having now finished the consideration of the pathology of this I pass on to the most important and essential part, the treatment.

Whoever reflects on the dangerous nature of the violent forms of Hæmoptysis

the necessity for prompt and energetic mea=
=sures must at once be obvious. An attack
is ushered in with a sense of weight or
oppression about the chest. dyspnoa. dry
hard cough full irregular pulse and
turnid countenance. these symptoms call
loudly for venesection. and will forever
vindicate the propriety of the practice
against any assertion that prejudice
may make to the contrary. among those
who object to bloodletting is the celebrated
Heberden. he asks how the opening a vessel
in the arm can possibly check a flow
of blood from one which has already
been ruptured by an effort of nature
my answer is that its efficacy is based
upon a principle which we every day
apply in our practice. viz the principle
of revulsion. he might as well have
denied the utility of active purging in

Phrenitis. for they both act in the same way. but to be beneficial in violent cases it must not be used with a sparing hand. I well recollect the excellent remarks of Prof. Chapman on this subject in his lecture on Hæmoptysis. his practice in cases where it is essentially necessary to afford relief is to abstract by a large orifice as much blood as will completely subdue the force of arterial action. we cannot do less in copious hæmorrhages without jeopardizing the life of our patient after bleeding common salt in a dry form in the dose of a tea spoonfull every fifteen or twenty minutes is a remedy of considerable efficacy. as cooperating with the same remedies cold applications to the chest & armpits are useful in checking Hæmoptysis the cold bath has been recommended in extreme cases but I think the remedy is

a very precarious one. the instantaneous effect of the cold bath would be a recoil of blood from the surface. and a consequ= =ent accumulation in the internal organs and it is therefore probable that it would only aggravate the disease it was intended to relieve. although venesection is our principal and most effectual remedy yet there are many others not to be neg= =lected. Among these is the sach. Saturni. this remedy was very much in vogue previous to the time of Sir. Geo. Baker. who reported unfavourably of it in consequence of which it had sunk into undeserved neglect. until the late Dr. Barton threw off the trammels of authority and reinsta= =ted it among our remedies in this disease; the mode of admenestering it is to combine two or three grains with half a grain of opium to be made into a

pill which is to be given every two or three hours. Allum is also much used. but this like the preceding is entirely inefficient in checking profuse hemorrhages. it is therefore best adapted to cases originally mild. The next remedy I shall mention is the digitalis. this from the control which it possesses over the circulating powers has been highly extolled in Hæmoptysis but its curative virtues I suspect has been greatly overrated. that it does possess the power of diminishing arterial action every one must admit. but it is equally palpable that it is far inferior to the lancet in this respect. Given in the common dose a considerable time elapses before it exerts its influence, and if the dose be much increased it is apt to excite vomi= =ting. It follows therefore that in the active forms of this disease we should never

resort to the digitalis in preference to venesection or in other words substitute a feeble remedy for one exceedingly powerful. but cases do exist in which bleeding would be inadmissible. when we may with advantage resort to Digitalis. "The cases to which it is suitable. are such as are accomp= =anied with a slight discharge. hacking cough. pain in the side and breast. a quick and active pulse. together with great mobility and weakness of the system. exhibited under such circumstances so as just to keep the pulse within the natural standard. this remedy may be of great benefit." Emetics have not been altogether unnoticed in this disease. They were introduced into the practice by Dr. Bryan Robinson of Dublin. but not mee= =ting with a favourable reception. they were abandoned. but there can be no doubt that vomiting will sometimes check hemorrhage from the lungs. the records of medicine contain evidence of the fact. Profr. Chapman in his

Therapeutics. remarks. "I have seen spontaneous vomiting do it, in several instances, and the worst case, which ever came under my notice, was completely suspended by a dose of Digitalis, which puked violently." But the remedy is certainly a precarious one and should never be resorted to except in extreme cases. where milder means have been tried in vain and here I think we might with propriety give an emetic. in preference to leaving our pa= =tient to inevitable death without one more effort to arrest the impending blow.
But however precarious Emetics are in Hemop= =tysis the same uncertainty does not attend thier exhibition when given in nauseating doses. the most useful of this clap to effect the purpose in view is the Ipecacuanha. It is to be administered in doses sufficient to to create a slight nausea. It is generally given in combination with small doses

of opium about two grains of the former with half a grain of opium. which is to be given at stated intervals.
The Mineral acids have been recommended in Hæmoptysis, but I shall pass them over in silence, because we have many articles whose superior efficacy is incontestably established to the exclusion of which, it would be injudicious to resort to the acids. To the catalogue of remedies in this disease we may add the narcotics. One article of this class has been noticed in a previous part of this essay. Cicuta, Henbane, Belladonna, and opium have all been recommended. The last of which I suspect is the only one deserving much attention, this under certain circumstances is an indispensable remedy in Hæmoptysis. Its employment is indicated where great Pulmonic irritation exists attended with a cough. and here opium

is eminently serviceable. Its remedial efficacy is entirely dependant on the power which it possesses of quieting irritation and allay= =ing cough. Having now finished the con= =sideration of the constitutional remedies in Hæmoptysis. I will proceed to mention some of the local applications. the most usefull of which are the vesicatories; these are very beneficial when much pain and irritation exists; they should be applied to the chest in preference to the extremities for it is an indisputable fact that the efficacy of such remedies is exactly pro= =portioned to thier proximity to the part affected. Local after general bloodletting has effected a reduction of arterial action is not to be omitted. But unless we attend to other circumstances all our efforts will be in vain. we should therefore when called to a case of Hæmoptysis insist

that the patient should be kept perfectly at rest with his shoulders elevated. The room should be kept cool and well ventilated. Company is to be excluded as much talk= =ing has been known to reproduce the dis= =charge. The diet should be mild. consisting chiefly of demulcent drinks. not giving enough to overload the stomack. and his bowels should be kept in a soluble state. By pur= =suing the course laid down we shall fre= =quently be able to accomplish a cure under the most unpromising circumstances. But unfortunately one attack predisposes to another. and here we should be very strict in our injunctions on the patient to avoid all the exciting causes. he should restrict himself to a begetable diet and. and milk together with some gentle exercise. He shou= =ld also. avoid if possible takeing cold. But we on our part should consider it as an

imperative duty not merely to rely on the rep=
=resentations of the patient himself. but to
examine for ourselves and if any symptoms
should present themselves which should lead
us to apprehend a return of the hemorrhage
the antiphlogistic plan should be more rigidly
pursued than ever in obstinate cases we should
try the effects of a salivation, but some cases
are so inveterate as to refuse to yield to any
plan of treatment, under such circumstances
we should recommend as the only alternative a
change of climate or a sea voyage.
Thus by constantly keeping in view the state of the
system. and not permitting our judgement to be war=
=ped by preconceived ideas or fanciful theories, ~~we~~
we may frequently remove the obstacles which
obstruct our patients return to health and have
the high gratification of knowing that through
our instrumentality one patient at least has been
rescued from the grave.